

BUILDING THE VISION

A Series of AZTech ITS Model Deployment Success Stories for the Phoenix Metropolitan Area

NUMBER TEN

High-Tech Transit

Using State-of-the-Art Technology to Keep Bus Riders Informed

The Challenge:

For transit riders, a bus ride can sometimes be a mystery. There's no guarantee that a particular bus will be running on schedule, and no information is available on real-time bus status.

Traditionally, the biggest problem experienced by transit riders is a lack of information. They may not have access to a bus schedule. Or, even if they do have a copy of the Bus Book, they have no way of knowing if their particular bus is on schedule – and if it's not on schedule, there's no system for letting them know when it might arrive. In a metropolitan area the size of the Valley of the Sun, buses are as prone to delays caused by incidents and congestion as any other vehicle. And without access to timely, accurate roadway information, bus drivers are limited in their ability to stay on schedule. All things considered, it's no mystery why many transit riders perceive the bus system to be sometimes unreliable.

AZTech is committed to improve traveler safety, customer satisfaction and air quality. Strengthening mass transit would serve to advance these goals by reducing automobile traffic. To encourage transit ridership, AZTech set out to create a more user-friendly bus system.

The Solution:

Giving transit riders the information they need was the focus of AZTech's endeavor to improve the bus system. Much goodwill for the transit system could be generated simply by not keeping riders in the dark. Providing timely updates on bus status would help riders plan ahead and eliminate uncertainty.

"Our main objective is to provide more information about the bus system to the public," said Yogesh Mantri, AZTech advanced public transit coordinator. "And we hope to show that this is a reliable mode of travel by demonstrating that we can predict when the buses are going to arrive at their bus stops."

For AZTech, the key to providing accurate, comprehensive bus data is a technology called the Automatic Vehicle Locator (AVL). More than 90 buses in the Valley have been equipped with AVL systems that employ Global Positioning Systems. The majority of these buses are used on four major regional transit routes that run through Phoenix, Tempe, Mesa and Scottsdale.

Frequent AVL transmissions identify each bus, its location and the time. AZTech computers compare this information with the bus schedule and extrapolate when the bus should arrive at its scheduled stops. This information is then relayed to computerized LED message boards at bus stops. The message board immediately displays the location and expected arrival time of the bus. "We're hoping to be very successful with this new technology," said Mike Nevarez, transit operations manager for the City of Phoenix Public Transit Department. "We'd like to be able to demonstrate that it's a very useful and efficient tool."

Additional vehicles have been equipped with AVL systems, including 70 City of Phoenix Dial-a-Ride

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paratransit vehicles, which provide scheduled and on-demand transportation to senior citizens and physically challenged transit riders. AVL units have also been installed in 15 supervisors' vehicles. LED message boards will be operational by the end of the year at select Mesa bus stops and at several bus stops in the vicinity of Arizona State University in Tempe.

Typical of an AZTech effort, the transit project has involved multi-agency coordination. Buses outfitted with communications technology come from the fleets of Valley Metro (which includes Phoenix Transit, Mesa Transit and Tempe Transit) and Scottsdale Transit. Developing and implementing the multifunctional network required collaboration on the part of private partners TRW and ADS. "AZTech has all these agencies that are working with each other instead of against each other. That is remarkable," said Bill Mossbarger, ADS president. "Everyone is cooperating and sharing technologies to build a system that's bigger than themselves. The private partners are doing that and the public partners are doing that."

Bus schedules have also been made more accessible. Schedules have been placed on the Arizona Department of Transportation's (ADOT) home page on the Internet as well as on AZTech kiosks, which are located at bus stations and other public venues around the Valley of the Sun.

The Benefits:

AZTech's transit project has greatly enhanced the reliability of the bus system in the metropolitan Phoenix area. Thanks to AVL technology, the transit operations center is able to monitor buses and respond more efficiently to any problems that a bus might encounter, such as mechanical failure. "The benefit is that we're able to track the schedule adherence of buses and be proactive in making sure that they stay on schedule," said Nevarez.

In addition, transit riders now have access to the timely, accurate and detailed information they require. Riders waiting at bus stops can make informed decisions based on the up-to-the-minute information displayed by the computerized LED message boards. "People can look right up at the sign at the bus stop and know when the bus is going to come," said Bill Daly, TRW project manager. "This information will be available over the Internet, pagers and other systems so that people can plan right from their home or office."

Bus drivers now also have greater access to comprehensive roadway information through AZTech's leading-edge Advanced Traveler Information System. In addition, the transit operations center receives traffic information and real-time video from across the Valley via a connection with AZTech. The AVL technology also helps Dial-a-Ride dispatchers better serve the public by routing vehicles more efficiently.

Linking the transit system to AZTech's telecommunications network provides further benefits. Transit drivers are able to act as probes, providing to the transit center on-the-spot reports of traffic incidents and congestion. This information is relayed to AZTech, improving its ability to provide motorists with a wide range of timely traffic data.

As an international showcase for state-of-the-art Intelligent Transportation Systems, the AZTech Model Deployment Initiative has documented numerous success stories. To learn more, visit the AZTech home page on the Internet at <http://www.azfms.com>.